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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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|-----------------|-------------|----------------------|---------------------|------------------|

10/660,687

09/11/2003

Brian L. Mueller

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08/25/2004

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EXAMINER

GUERRERO, MARIA F

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/660,687

Applicant(s)

MUELLER ET AL.

Examiner

Maria Guerrero

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9-11-03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office Action is in response to the Preliminary Amendment filed September 11, 2003.

### **Status of Claims**

2. Claims 18-42 are canceled. Claims 1-17 are pending.

### ***Information Disclosure Statement***

3. The Information Disclosure Statement filed September 11, 2003 has been considered.

### ***Specification***

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

5. Claims 1 and 3 are objected to because of the following informalities: claim 1 recites "about 0.5wt. % or more fluoride ions"; claim 3; line 2 recites a misspelled term "conformed". Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-12 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steckenrider et al. (WO 00/00560) (cited on IDS).
7. Steckenrider et al. teaches a system for planarizing a composite substrate comprising a polishing composition (page 13). Steckenrider et al. discloses the polishing composition comprising fluoride ions, an amine, a base, water, and an abrasive (page 7, lines 13-21, pages 13-17). Steckenrider et al. shows the abrasive being alumina, silica, titania, ceria, zirconia, germania and mixtures thereof (page 4). Steckenrider et al. teaches the amine being an alcoholamines such as 2-dimethylamino-2-methyl-1-propanol (page 6, lines 15-30). Steckenrider et al. discloses the pH being in a range of from about 7.0 to about 12.0 (corresponding with the claimed alkalinity value)(col. 7, lines 22-25). Steckenrider et al. shows using fluoride acid, ammonium hydroxide, and a quaternary ammonium compound (page 7, lines 18-21, pages 9-10). Steckenrider et al. discloses employing a polishing pad (page 15, lines 20-25).

Regarding the composition claimed, the claimed ranges are not considered to be critical because there is not specific range claimed, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves

unexpected results relative to the prior art range." In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g).

Furthermore, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). In re Geisler, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997). A prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness." In re Peterson, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to recognize that any desired particular composition would be obtained in Steckenrider et al. reference by routine experimentation because this is not critical. Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

8. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steckenrider et al. (WO 00/00560) (cited on IDS) in view of Morrison et al. (U.S. 5,938,505) (cited on IDS).

Regarding claims 13-14, Steckenrider et al. does not specifically show the system having the selectivity of oxide: nitride and the cationic species that reduces nitride removal. However, Morrison et al. is cited as evidence to show that the system disclosed by Steckenrider et al. would have the selectivity of oxide: nitride and the cationic species that reduces nitride removal because Morrison et al. employs similar components in the polishing composition (col. 3, lines 5-35, col. 4, lines 18-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Steckenrider et al. reference by specifying the oxide/nitride selectivity as suggested by Morrison et al. in order to apply the system for polishing a substrate having trenches without extra processing steps (Morrison et al., col. 1, lines 8-20; Steckenrider et al., page 1, lines 29-31).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang et al. (U.S. 6,177,026), Kaufman et al. (U.S. 5,954,997), Steckenrider et al. (U.S. 6,533,832), Kasai et al. (U.S. 5,962,343), and Kaufman et al. (U.S. 6,063,306) teach several embodiments pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 571-272-1837.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 18, 2004

  
**MARIA F. GUERRERO**  
**PRIMARY EXAMINER**